Recommendations on the effects of aquaculture on public health

Aquaculture must not cause unacceptable risks to public health or harm that negates the benefits of the improved livelihood and nutrition that its adoption can bring. It should be subject to similar controls and safeguards as are applied to agriculture, irrigation and other aspects of food production and handling. This concerns all persons affected by and involved in aquaculture, and to other users of waters in which aquatic organisms are farmed or which are affected by aquaculture: the farm workers, handlers and processors, sellers and consumers of farmed aquatic produce.

The health of aquaculture workers and other users of waters in which aquatic organisms are farmed or which are affected by aquaculture must be safeguarded. There must be effective measures against exposure to waterborne pathogens and parasites, to toxic chemicals used on aquatic farms, and against reduction of water quality for purposes such as domestic supply, watering crops and livestock, washing clothes and utensils, bathing, sports and recreation. Examples of possible health risks to such persons include exposure to waterborne diseases, such as bilharzia and leptospirosis, and to chemicals such as trace metals, pesticides, disinfectants, antibiotics and hormones; and the risks of working in the aquatic medium, including exposure to harsh climatic conditions and drowning.

All available information on health risks from aquaculture should be compiled as a statistical database with the involvement of appropriate international organizations, such as WHO (World Health Organization) and ILO (International Labor Organization), so as to solve guidelines and codes of practice. This database should be regularly updated as aquaculture expands and experience is increased.

In order to mitigate or avoid public health risks from aquaculture development including consumption of aquatic produce, more research is needed on the real or perceived role of aquaculture operations and their produce in human disease transmission and the risk of chemical and microbial contamination. In particular, population-wide studies are required, especially in developing countries, of exposure to mercury, cadmium, organochlorine pesticides, polychlorinated byphenyls (PCBs) and dioxins. Consumption of aquatic produce may be an important source of exposure. Monitoring should employ noninvasive techniques (analysis of hair, urine, or breastmilk-as appropriate) in addition to autopsy-derived samples, when available.

Research is also needed on better methods for aquatic disease prophylaxis and control as an alternative to massive use of chemotherapeutants.

Regarding the safety of aquatic produce, monitoring programs for trace contaminants, bioactive compounds and microorganisms are needed. Research and development programs are required to improve the tests available for ensuring the safety of aquatic produce. The present tests for biotoxins, for example, are inadequate to afford an acceptable degree of protection, even when widely employed. Very few of the many trace contaminants which may be present in aquaculture produce are monitored on a regular basis.

Source: RSV Pullin. Discussion and Recommendations on Aquaculture and the Environment in Developing Countries.* In: *Environment and Aquaculture in Developing Countries. Edited by RSV Pullin* et al. *1993.